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EXAMINER

SHAPIRO, LEONID

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/747,464

Applicant(s)

OUELLETTE ET AL.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 8 is/are allowed.
- 6) ☐ Claim(s) 1-6,9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bock et al. (US Patent No. 6,417,868 B1) in view of Borel et al. (US Patent No. 6,252,613 B1).

As to claim 1, Bock et al. teaches the method of driving a passive matrix display having a plurality of addressable rows and a plurality of columns to which successive frames of video data is applied and which intersects rows to form a plurality of sub-pixels which when grouped together into sets to form a pixel (See Fig. 3, items 41-49, in description See Col. 4, Lines 5-10), the improvement comprising simultaneously addressing successive pairs of rows for selecting distinct sets of a fixed number of sub-pixels forming pixel from a superset of sub-pixels surrounding pixel for each of a set of sub-frames within a frame of video data (See Fig. 3, items 41-49, in description See Col. 4, Lines 5-36 and Col. 2, Lines 18-25).

Bock et al. does not show applying video data to each sets of sub-pixels in a such manner that the time average of the video data over the frame of video data is in accordance with a video image to be displayed for the frame. Since Bock et al. divided pixel in subpixel in order to increase number of gray shades (See Col. 4, Lines 1-4 and Col. 2, Lines 10-15) and preserve or reduce resolution (See Col. 4, Lines 5-10), it would have been obvious to one ordinary skill in the art at the time of invention that the time average of the video data over the frame of video data is in accordance with video image to be displayed for the frame, in order to preserve

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resolution the display has to be subdivided into more subpixels (See Col. 2, Lines 10-15 in Bock et al. reference).

Modified Block et al. does not show distinct sets contains different subpixels.

Borel et al. teaches distinct sets containing different subpixels for addressing even and odd rows (See Fig. 4, items 21,23,54, in description See Col. 6, Lines 43-48 and Col. 7, Lines 4-26). It would have been obvious to one ordinary skill in the art at the time of invention to implement distinct sets of different subpixels as shown by Borel et al. in the Block et al. apparatus in order to enable a combination of subpixels to be selected making it possible to obtain a better compromise between the vertical and horizontal resolution whatever the type of screen used (See Col. 2, Lines 9-12 in Borel et al. reference).

As to claim 2, Bock teaches two sets of six pixels, each defined by the intersection of three fixed adjacent columns (See Fig. 3, items 51-53, in description See Col. 4, Lines 37-46) and two selected adjacent rows (See Fig. 3, items 61-62, in description See Col. 4, Lines 9-10).

Bock does not show rows are selected according to a progressive format.

Since LCD usually driven using progressive format and Bock et al. does not show provisions for driving even and odd lines separately, as required by interlaced format, it would have been obvious to one ordinary skill in the art at the time of invention that progressive format used in Bock et al. apparatus in order to preserve resolution the display has to be subdivided into more subpixels (See Col. 2, Lines 10-15 in Bock et al. reference).

As to claim 3, Bock et al. does not show two sets of six sub-pixels, each defined by the intersection of three fixed adjacent columns and two selected adjacent rows and wherein rows

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are selected according to an interlaced format such that rows are alternately grouped into odd and even sets.

Borel et al. teaches two sets of six sub-pixels, each defined by the intersection of three fixed adjacent columns and two selected adjacent rows (See Fig. 4, items 9, 21, 23, 54, Li, Li+1, in description See Col. 7, Lines 4-26 and Col. 6, Lines 44-48) and wherein rows are selected according to an interlaced format such that rows are alternately grouped into odd and even sets (See Fig. 4, items 9, 21, 23, 54, Li, Li+1, in description See Col. 7, Lines 4-26 and Col. 6, Lines 44-48). It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et al. approach in the Bock et al. apparatus and method in order to use of an algorithm for adapting the screen to a source of interlaced images (See Col. 1, Lines 37-38 in the Borel et al. reference).

As to claim 4, Bock et al. does not teach three sets of three sub-pixels arranged as sub-pixel triads spanning two rows selected from a superset of five adjacent sub-pixels wherein each set has a common sub-pixel (See Fig. 9, Items 47, 49, 68, in description See Col. 9, Lines 28-57). It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et al. approach in the Bock et al. apparatus in order to use second pixel common to odd video row 47 (See Col. 9, Lines 39-40 in the Borel et al. reference).

As to claims 5, 9 Bock et al. does not teach each set of sub-pixels consist of two red, two green and two blue sub-pixels for a full color display.

Borel et al. teaches each set of sub-pixels consist of two red, two green and two blue sub-pixels for a full color display (See Fig. 4, item 9, in description See Col. 7, Lines 4-26). It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et

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al. approach in the Bock et al. apparatus and method in order to use of an algorithm for adapting the screen to a source of interlaced images (See Col. 1, Lines 37-38 in the Borel et al. reference).

As to claim 6, Borel et al. teaches set of three sub-pixels consists of a red, green and blue subpixel for a full color display (See Fig. 9, item 20, in description See Col. 9, Lines 28-57).

### *Allowable Subject Matter*

2. Claims 7-8 allowed.

3. The following is a statement of reasons for the indication of allowable subject matter:

Relative to independent claim 8 the major difference between the teaching of the prior art of record (US Patent No. 6,417,868 B1, Bock et al. and US Patent No. 6,252,613 B1, Borel et al.) and the instant invention is that the said prior art **does not teach** six sets of three sub-pixels arranged as sub-pixel triads spanning two rows selected from a superset of seven adjacent sub-pixels spanning three rows wherein each set has a common sub-pixel.

### *Response to Amendment*

4. Applicant's arguments filed on 05-14-03 with respect to claims 1-6, 9 have been considered but are moot in view of the new ground(s) of rejection.

### *Response to Arguments*

5. Applicant's arguments filed on 05-14-03 have been fully considered but they are not persuasive.

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On page 5, second paragraph the Applicant stated that Borel does not teach the selection of “ distinct sets...from superset of subpixels... However, Borel teaches distinct sets containing different sub-pixels for even and odd video rows (See Figs. 4-9, items 21,23,54, in description See Col. 6, Lines 43-48 and Col. 7, Lines 4-26).

### *Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### *Telephone inquire*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Is  
May 28, 2003



**BIPIN SHALWALA  
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